THE TRAP-DOOR SPIDER.

By Helen Harcourt.

"NO ADMITTANCE."

Of all the curious occurrences in this wonderful world, one of the most comical is suddenly to behold a small, circular piece of earth rise at your feet, revealing a round hole, with a black, hairy head protruding therefrom, in a cautious, knowing way. Your surprise keeps you motionless, and so the spider throws wide open the little door, and marches boldly forth. Once, you know,

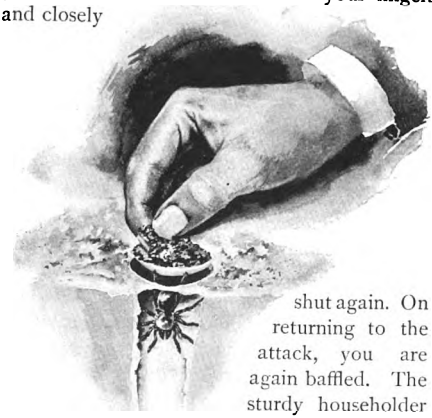
> There came a big spider,
> And sat down beside her,
> And frightened Miss Muffet away;

but, in your case, it is your funny little visitor who becomes panic-stricken, and suddenly vanishes into the earth. Then you wonder what it all means, and begin to search for your comical visitor's place of retreat.

But to find it is not an easy task, for so cleverly has the fat little workwoman concealed her gate, that, even after the most careful search, you are unable to detect a single spot where the surface of the soil appears to have been disturbed; so you do the wisest thing in your power — go quietly back to your seat, and remain there in perfect silence. By this time you have rightly suspected your shy visitor to be the trap-door spider, and you also may be aware that the night, which is rapidly approaching, will lure her again from her home in search of her evening meal. When the trap once more shows itself, by being lifted, you understand why you could not find it before. The cunning spider had covered it with moss, so that, when shut, no trace of it was visible. This time silence is your motto; not a muscle must be stirred; a moment more, and that queer little house will be at your disposal — ah! that was an unlucky sneeze.

Back pops your fat friend, and down goes the door in a flash. Never mind, there is no harm done, after all; for this time you have marked the spot, and can pursue your investigations.

Open the door first, and look into the home that it guards; but how difficult it is to open that door! You succeed in lifting it gently, about an eighth of an inch, just enough to see the tenant hastily hooking her hind legs to the silken lining of the trap, and her fore legs to the sides of the tube itself, and then you are astonished to find the little door jerked from your fingers and closely shut again. On returning to the attack, you are again baffled. The sturdy householder defends her premises with a desperate strength; so determined is her opposition, indeed, that you finally desist, lest the delicate hinge of the lid should be broken in the struggle.



A TUG OF WAR.

Failing to take her house by storm, you try mining, and carefully set to work to dig away

Digitized by Google

the earth around the long, cylindrical nest, which you know extends below that funny door. Even this does not drive the spider to desert her home. Actual violence must be employed before this faithful freeholder will yield up her hard-earned burrow. And when she *is* finally forced to this extremity, your heart fails you, and you almost regret driving the brave little tenant away.

Full of life and activity when she first peered

KEEPING OPEN HOUSE.

out upon you, brave and determined in her defense of her home, the spider is no sooner compelled to desert her post than a total change comes over her. Though herself uninjured, she remains fixed on the spot whence her burrow has been removed, or else moves slowly about, without aim or purpose. Who will say that spiders cannot feel grief?

Before examining more closely into the tubular nest you hold in your hand, observe what a strange-looking architect constructed it. She is a chubby little worker, about an inch and a half in length, and with a large, round abdomen, from which project the spinnerets that manufactured the silken lining of her nest. The legs are short, but strong, and she is armed with a dangerous-looking pair of fangs, so much like those of a crab that the French call her a "crab-spider." She sleeps most of the day, and at night sallies forth on hunting expeditions, from which she never returns unsuccessful. She preys upon all insects, but especially beetles; and down there, in what you might call the cellar, you will be likely to find some remains of this favorite game.

When the loose earth is shaken from the nest, one can see exactly how it is made. When the trap-door spider selects a site for her home (the site is invariably on sloping ground), she first sinks a tunnel — a straight, smooth, circular shaft. This task completed, she next begins a lining, that the earth may not fall in. The outer lining, as you will see, is rough, and of a brownish color; it is laid on in flakes, and is really so stiff and harsh that under other circumstances you would more readily believe it to be the bark of a tree than a web woven by a spider. But there is an inner lining to this outer one, and this is of a wonderfully different texture, being perfectly smooth, and of silky softness; moreover, it is white instead of brown, looking a good deal like unsized paper. If you were to apply a microscope to this lining, you would find that, like the outer one, it is formed of threads twisted together without order or regularity, and of very coarse threads, too,— *coarse* when compared with the webs spun by the majority of spiders. Examining the trap-door, you will find that it is made of the same materials as the tube, only somewhat thicker, and circular in shape. Is it not marvelous how exactly it fits the mouth of the tube, being neither too large nor too small? — and yet, incredible as it may seem, the inner edges of both the tube and the door are beveled, so as to make a certainty of their fitting tightly together. The very shape of this little door is wonderful, too. In the first place, no human workman could have disguised its location more thoroughly, had concealment been the chief object sought; for, not content with thatching her door with moss, the fat little worker has hidden its circular edge by a series of minute projections formed of moss and earth. Besides, this strange trap is so arranged on the slope of the ground that its own weight causes it to shut of itself when the lifting power is removed, its hinge being invariably on the upper side.

That hinge is another marvel of ingenuity. Instead of being let into the door, as a human carpenter might have arranged it, and so made liable to slip or become displaced, it is a continuation of the inner lining of the tube, and

Digitized by Google

will hold firmly to its place so long as the nest itself shall last.

The trap-door spider, whose odd home we have thus studied, lives in the tropics, holding cold-blooded Northerners in high disdain, and plainly it prefers Jamaica, the Mediterranean shores, Australia, and kindred climates.

A CLEVER LITTLE BUILDER.

By Blanche L. Macdonell.

"Oh! the horrid thing!" shrieks the little girl at the sight of a spider; and often older people are foolish enough to follow her example. But if that child could be induced to watch the insect's ways and methods carefully, she would never be tempted again to call it "horrid," but would soon be lost in admiration at the unwearied little worker's cleverness and ingenuity.

Spiders may be divided into two great classes — the Sedentary Spiders, who remain at home and set traps for their prey; and the Wandering Spiders, who roam busily over the earth, and rely upon their own agility for providing food. Sedentary spiders are of three main species: (1) those that set the ordinary radiating cobweb traps; (2) those that construct cavernous homes with traps set outside of them; (3) those that live in holes which they dig in the ground, and which they line with silk.

When during your summer vacation in the country you take an early morning walk, you will notice thousands of cobwebs resting upon grass and bushes; the weight of dew which hangs on them bears ample testimony to their strength. The spider's spinnerets are beautifully adapted to the work which they are intended to accomplish. If you want a lesson in patience and sagacity, watch her process of building, and note how cleverly she overcomes all engineering obstacles. It takes a spider perhaps about half an hour to construct a web in all its completeness. After choosing the most desirable spot, Madam Spider sets industriously to work to spin a thread of great length (large spiders make it as much as fifty feet), which floats lightly about in the breeze until it is caught by some branch or bough. As soon as the little architect feels that her rope is attached, she draws it taut; the first step is then complete, the foundation of her dwelling is laid. Then the mistress of the mansion proceeds in her work by traveling rapidly along, and sending out lines at angles. She has frequently been known to throw these lines across running streams.

Once made, the web is furnished with a telegraph. Lines are stretched from all directions

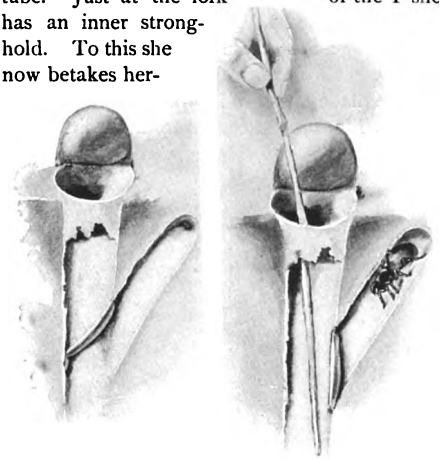
ONE OF NATURE'S ODDITIES. TRAP-DOOR SPIDER'S NEST.

to her place of waiting; on these she rests her feet, and is thereby apprised of the approach of any prey. Once the victim is fairly caught there is no possibility of escape; the spider at once weaves a web around its body until it becomes perfectly helpless, and is carried off in triumph.

The den spider, who is liable to attacks from her enemies, is the most curious study of all. To have an idea of this creature's home, you must imagine a hollow tube in the ground, divided, at some distance down, till it is like the letter Y. One top of the Y is the opening; the other does not come quite to the surface, but forms a blind alley. At the opening is a lid, with a silken hinge, which our friend the spider generally keeps prudently closed. Suppose that an enemy discovers this door, and endeavors to open it. The spider, laying hold of

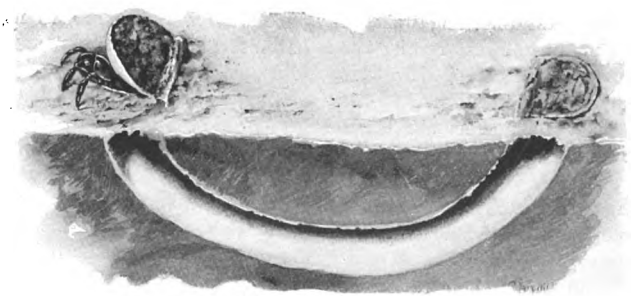
Digitized by Google

the door on the inside with her strong claws, holds it tight. It may be that this rebuff proves sufficient, and the assailant goes somewhere else in search of a dinner. But if the spider finds herself overmatched, she wisely abandons this defense, and rushes down the tube. Just at the fork of the Y she has an inner stronghold. To this she now betakes herself, closing it, and holding the door tight as before. Again a struggle takes place, and there is a chance that the adversary may retire. But if the spider finds her foe too strong she is still provided with a resource. She makes a strategical movement which rarely fails of attaining its purpose: suddenly rushing into the blind alley, she draws the door over the opening, thus hiding every sign of it. There she lies comfortably concealed, enjoying the confusion of her enemy. He rushes triumphantly down the stem of the Y, anticipating an easy triumph, and to his utter amazement finds it empty! He actually knew she was there. He pushes around, searching in every corner. Slowly and sadly he comes to the conclusion that he has been made a fool of, and finally departs, dinnerless, disconsolate, and deeply disgusted. How that clever spider must chuckle as she listens to his receding footsteps!



HOW THE SPIDER RETREATS UP A SIDE ALLEY.

One of the simplest of nature's barometers is a spider's web. When there is a prospect of wind or rain, the spinner shortens the filaments by which the web is sustained, and as long as the weather continues variable leaves it in that state. If the spider lengthens the threads, it is a sign of calm, fair weather. The duration of the fine weather may be judged by the length to which the threads are let out. If the spider remains inactive, it is a sign of rain; if she continues to work during a shower, the downpour will soon be followed by clearing weather. Observation has shown that the spider makes changes in its web every twenty-four hours; if such changes are made in the evening, just before sunset, the night will certainly be clear.



A HOUSE WITH TWO DOORS.

Digitized by Google